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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Application Number: 10/051,634
Filing Date: January 18, 2002
Appellant(s): BASHYAM ET AL.

Brenna Brock
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed July 09, 2007 appealing from the Office action mailed November 15, 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings, which will directly affect or be directly affected by or have a bearing on the Board' s decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant' s statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant' s statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,389,462	Cohen et al	05-2002
6,308,238	Smith et al	10-2001
5,920,732	Riddle	07-1999
5,687,392	Radko	11-1997

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-10, 15-41, 46-72, 77-103, and 108-124 rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen et al (U.S. Patent No. 6,389,462) in view of Smith et al (US. Patent No. 6,308,238)

3. As per claim 1, Cohen et al teach a method of managing network communication comprising:

terminating a first transmission control protocol ("TCP") connection at a first network element, wherein said first TCP connection is between said first network element and a second network element, and said first TCP connection is intended to be terminated at a third network element (column 7, lines 11-35 and column 2, lines 39-65; original connection to origin server is terminated and redirected to proxy);

initiating a second TCP connection between said first network element and a third network element (column 2, lines 51-65, column 15-19 and column 7, lines 27-35);

establishing communications between said second (client) and said third network elements (origin servers) via said first network element (proxy) (column 7, lines 1-35 and column 2, lines 26-44); and

transferring said data between said second and said third network elements (column 1, lines 48-58, column 3, lines 40-46, and column 7, lines 15-35; transfers requested data from origin server to client).

4. Cohen et al fails to determining need for data transfer between said second and said third network elements by monitoring an amount of space available in at least one of a plurality of buffers. However, Smith et al teach determining whether the allocated buffer is full, if not full transferring the next block of data from the server into the buffer (column 13, lines 29-57) It would have been obvious to one of the ordinary skill in the art at the time of the applicant' s invention to combine the teachings of Cohen et al and Smith et al because doing so would provide an efficient method of handling multiple client processes by allocating buffers for each client process and monitoring each buffer to completely transfer all blocks of the requested data.

5. As per claim 2, Cohen et al teach said second network element initiates said first TCP connection for said third network element (column 2, lines 39-65 and column 6, lines 47-67; client request is directed to origin server).

6. As per claim 3, Cohen et al teach said communications between said second and said third network elements are established using said first and said second TCP connections (column 7, lines 1-35).

7. As per claim 4, Cohen et al teach said communications between said second and said third network elements forms an end-to-end TCP connection (column 2, lines 39-65 and column 7, lines 1-35).

8. As per claim 5, Cohen et al teach said first network element is a proxy server (column 7, lines 1-35).

9. As per claim 6, Cohen et al fail to teach wherein a control unit of said proxy server monitors said plurality of buffers. However, Smith et al teach a receive buffer and a transmit buffer operated under the control of a memory controller /sequencer (column 15, lines 22-34 and column 44-49). It would have been obvious to one of the ordinary skill in the art at the time of the applicant' s invention to combine the teachings of Cohen et al and Smith et al because Smith et al' s use of a proxy with transmit and receive buffers controlled by a memory controller in Cohen et al' s method would provide a method to monitor buffers in a proxy to support multiple simultaneous TCP connections with clients requesting data.

10. As per claim 7, Cohen et al teach control unit transfers said data between said second and said third network elements (column 7, lines 1-35; inherent in proxy).

11. As per claim 8, Cohen et al teach said proxy server supports transparent communications between said second and said third network elements (abstract, column 1, lines 24-27, and column 2,lines 39-65).

12. As per claim 9, Cohen et al fail to teach at least one of said plurality of buffers is a receive buffer. However, Smith et al teach the use of a receive buffer in a proxy (column 15, lines 22-34 and column 44-49). It would have been obvious to one of the ordinary skill in the art at the time of the applicant' s invention to combine the teachings of Cohen et al and Smith et al because Smith et al' s use of a proxy with transmit and receive buffers controlled by a memory controller in Cohen et al' s method would provide a method to monitor buffers in a proxy to support multiple simultaneous TCP connections with clients requesting data. Receive buffers hold incoming data requested by clients until operating system/controller is ready to deal with the data.

13. As per claim 10, Cohen et al fail to teach at least one of said plurality of buffers is a transmit buffer. However, Smith et al teach the use of a transmit buffer (column 15, lines 22-34 and column 44-49). It would have been obvious to one of the ordinary skill in the art at the time of the applicant' s invention to combine the teachings of Cohen et al and Smith et al because Smith et al' s use of a proxy with transmit and receive buffers controlled by a memory controller in Cohen et al' s method would provide a method to monitor buffers in a proxy to support multiple simultaneous TCP connections with clients requesting data. Transmit buffers transmit requested data to requesting client.

14. As per claim 15, Cohen et al teach said second network element is one of a plurality of clients (Figure 1 and column 6, line 23).

15. As per claim 16, Cohen et al teach one of a plurality of applications on said client initiates said first TCP connection for said client (column 6, lines 47-50, column 1, lines 59-67 column 7, lines 1-11, and abstract).

16. As per claim 17, Cohen et al teach said third network element is one of a plurality of servers (column 1, lines 11-23, column 7, lines 1-35 column 2, lines 26-44, abstract, and Figure 1).

17. As per claim 18, Cohen et al teach a data switching unit of said proxy server determines which one of said plurality of servers to use for said second TCP connection (column 3, lines 22-27, 40-46, column 7, lines 27-48, and column 1, lines 44-67).

18. As per claim 19, Cohen et al teach monitoring said first TCP connection (column 7, lines 1-47 and Figure 2).

19. As per claim 20, Cohen et al teach receiving a request for data from said application; and determining whether said request requires said second TCP connection with one of said plurality

of As per claim 21, Cohen et al teach data switching unit receives said request for data via said control unit (Figure 2 and column 7, line 55-column 8, lines 10).

20. As per claim 22, Cohen et al teach determining of said second TCP connection is done by said data switching unit (column 3, line 10-30, column 1, lines 44-67, column 2, lines 40-65, and column 7, lines 1-47).

21. As per claim 23, Cohen et al teach if said request does not require said second TCP connection with one of said plurality of servers, servicing said request for data, and closing said connection with said client (column 1, lines 13-23, column 2, lines 35-65, column 7, lines 1-46).

22. As per claim 24, Cohen et al teach said request for data is served by passing data from said data switching unit to said control unit for transmission to said application on said client (Figures 2, 4, column 15, lines 35-56, and column 7, line 55-column 8, line 10).

23. As per claim 25, Cohen et al teach if said request requires said second TCP connection with one of said plurality of servers, selecting a first server from said plurality of servers, and initiating said second TCP connection with said first server (column 3, lines 22-27, 40-46, column 1, lines 44-67column 1, lines 13-23, column 2, lines 35-65, and column 7, lines 1-46).

24. As per claim 26, Cohen et al teach said application requests said end-to end TCP connection with said first server (column 1, lines 48-67, column 3, lines 7-28, column 6, lines 47-67 and column 7, lines 11-48).

25. As per claim 27, Cohen et al teach receiving said data on said second TCP connection from said first server; monitoring space in said cache; and if said cache has space, determining whether said first TCP connection need additional data (column 1, lines 48-58, column 3, lines 40-46, and column 7, lines 15-35). Cohen et al fails to teach the use of buffers. However, Smith et al teach a receive buffer and a transmit buffer operated under the control of a memory controller/sequencer in a proxy (column 15, lines 22-34 and column 44-49). It would have been

obvious to one of the ordinary skill in the art at the time of the applicant' s invention to combine the teachings of Cohen et al and Smith et al because Smith et al' s use of a proxy with transmit and receive buffers controlled by a memory controller in Cohen et al' s method would provide a method to monitor buffers in a proxy to support multiple simultaneous TCP connections with clients requesting data.

26. As per claim 28,Cohen et al teach if said first TCP connection needs said additional data, requesting said additional data from said first server; and repeating said steps of receiving, storing, transferring, monitoring and determining until said request for data from said application is served (column 13, line 18 – column 14, lines 20; packets are obtained from origin server until request is completed).

27. As per claim 29, Cohen et al teach said additional data is transferred into said transmit buffer without a request for said additional data (column 7, lines 1-48 and column 13, line 18 – column 14, lines 20; packets of the data requested will be transferred from origin server to proxy until completed).

28. As per claim 30, Cohen et al teach if said request for data from said application is served, closing said first TCP connection with said client (column 1, lines 48-58, column 3, lines 40-46, and column 7, lines 15-35; inherent that a connection established to get requested data gets terminated upon completion of request).

29. As per claim 31, Cohen et al teach said closing of said connection is done by said control unit upon a receiving a request for closing said connection from said data switching unit ((Figures 2, 4, column 15, lines 35-56, and column 7, line 55-column 8, line 10).

30. As per claims 32-41, 46-72, 77-103, 108-124, these claims contain similar limitations as claims 1-10, and 15-31 above, therefore are rejected under the same rationale.

31. Claims 11, 13, 42, 44, 73, 75, 104, and 106 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen et al in view of Smith et al and in further view of Riddle (U.S. Patent No. 5,920,732).

32. As per claims 11 and 13, Cohen et al fail to teach that a buffer is pre-allocated. However, Riddle teaches a method for preallocating buffers (abstract and column 5, lines 5-15). It would have been obvious to one of the ordinary skill in the art at the time of the applicant' s invention to combine the teachings of Cohen et al, Smith et al, and Riddle because Riddles' use of a preallocated buffers in Cohen et al and Smith , III et al' s method would designate specific portions of the buffers for specific content, such as client requests.

33. As per claims 42, 44, 73, 75, 104, and 106, these claims contain similar limitations as claims 11 and 13 above, therefore are rejected under the same rationale.

34. Claims 12, 14, 43, 45, 74, 76, 105, and 107 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen et al in view of Smith et al (U.S. Patent No. 6,735,634) and in further view of Radko (U.S. Patent No. 5,687,392).

35. As per claims 12 and 14, Cohen et al fail to teach that a buffer is dynamically allocated. However, Radko et al teach that use of a dynamically allocated buffer (abstract). It would have been obvious to one of the ordinary skill in the art at the time of the applicant' s invention to combine the teachings of Cohen et al, Smith et al, and Radko because Radko' s use of a dynamically allocated buffer in Cohen et al and Smith , III et al' s method would allow for increased buffer space by not designating specific portions of the buffers for specific content and dynamically allocating space as data space is needed.

36. As per claims 43, 45, 74, 76, 105, and 107, these claims contain similar limitations as claims 12 and 14 above, therefore are rejected under the same rationale.

(10) Response to Argument

Argument: *Smith fails to teach or suggest " determining need for data transfer between said second and third network elements by monitoring an amount of space available in at least one of a plurality of data buffers" .*

In response, the Examiner respectfully disagrees. The Smith reference was used to cure the deficiencies of Cohen. Cohen teaches, among other limitations of claim 1, the transferring of said data between *said second and said third network elements* (column 1, lines 48-58, column 3, lines 40-46, and column 7, lines 15-35; transfers requested data from origin server to client). Cohen failed to teach *determining need for data transfer by monitoring an amount of space available in at least one of a plurality of data buffers.* Smith teaches a method of writing data to an allocated buffer. The client process retrieves the buffer status information for the allocated buffer. The client process transfers the first block of data, updates the status information and determines whether the block of data included an end-of-file indicator. It then determines if the allocated buffer is full by comparing the updated length of valid data in the buffer to the known size of the buffer. If the buffer is full, then the client process searches the buffer status information to determine whether any buffers are available. If there are any, then a new unallocated buffer is used and linked with the full buffer. The data transfer process continues until all available data is written or until all buffers are allocated. (See column 13, line 29-column 14, line 7). Here it can be seen that the client process determines the need for transfer of data to an unallocated buffer when it is determined that the allocated buffer is full. This meets the scope of the limitation of determining need for data transfer between by monitoring an amount of space available in at least one of a plurality of data buffers. Therefore the combination of Cohen and Smith meet the scope of the claimed limitations.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner' s answer.

For the above reasons. it is believed that the rejections should be sustained.

Respectfully submitted,

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Conferees: 10/26/07

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